What is claimed is:

CLAIMS

1. An isolated, enriched or purified nucleic acid molecule encoding a phosphatase polypeptide, wherein said nucleic acid molecule comprises a nucleotide sequence that:

(a) encodes a polypeptide having an amino acid set forth in SEQ ID NO:2;

(b) is the complement of the nucleotide sequence of (a);

(c) hybridizes under stringent conditions to the nucleotide molecule of (a) and encodes a phosphatase polypeptide;

(d) encodes a polypeptide having an amino acid sequence set forth in SEQ ID NO:2, except that said polypeptide lacks one or more, but not all, of an N-terminal domain, a C terminal catalytic domain, a catalytic domain, a C-terminal domain, a coiled-coil structure region, a proline rich region, a spacer region and a C-terminal tail; or

(e) is the complement of the nucleotide sequence of (d).

2. The nucleic acid molecule of claim 1, further comprising a vector or promoter effective to initiate transcription in a host cell.

3. The nucleic acid molecule of claim 1, wherein said nucleic acid molecule is isolated, enriched, or purified from a mammal.

4. The nucleic acid molecule of claim 3, wherein said mammal is a human.

5. A nucleic acid molecule of claim 1 comprising a nucleic acid having a nucleotide sequence which hybridizes under stringent conditions to a nucleotide sequence encoding a phosphatase polypeptide having an amino acid sequence set forth in SEQ ID NO:2.

6. An isolated, enriched, or purified phosphatase polypeptide, wherein said polypeptide comprises

(a) an amino acid sequence at least about 90% identical to a sequence set forth in SEQ ID NO:2; or

(b) an amino acid sequence set forth in SEQ ID NO:2; except that the polpeptide lacks one or more, but not all, of the domains selcted from the group consisting of an N terminal domain, a C terminal catalytic domain, a catalytic domain, a C terminal domain, a coiled coil structure region, a proline rich region, a spacer region and a c terminal tail.

7. The phosphatase polypeptide of claim 6, wherein said polypeptide is isolated, purified, or enriched from a mammal.

8. The phosphatase polypeptide of claim 7, wherein said mammal is a human.

9. An antibody or antibody fragment having specific binding affinity to a phosphatase polypeptide or to a domain of said polypeptide, wherein said polypeptide comprises an amino acid set forth in SEQ ID NO:2.

10. A hybridoma which produces the antibody of Claim 9.

11. A kit comprising an antibody which binds to a polypeptide of claim 6 and a negative control antibody.

12. A method for identifying a substance that modulates the activity of a phosphatase polypeptide comprising the steps of:

(a) contacting the phosphatase polypeptide substantially identical to an amino acid sequence set forth in SEQ ID NO:2 with a test substance;

(b) measuring the activity of said polypeptide; and

(c) determining whether said substance modulates the activity of said polypeptide.

13. A method for identifying a substance that modulates the activity of a phosphatase polypeptide in a cell comprising the steps of:

(a) expressing a phosphatase polypeptide having a sequence substantially identical to an amino acid sequence set forth in SEQ ID NO:2;

(b) adding a test substance to said cell; and

(c) monitoring a change in cell phenotype or the interaction between said polypeptide and a natural binding partner.

14. A method for treating a disease or disorder by administering to a patient in need of such treatment a substance that modulates the activity of a phosphatase substantially identical to an amino acid sequence set forth in SEQ ID NO:2.

15. The method of claim 14, wherein said disease or disorder is selected from the group consisting of cancers, immune-related diseases and disorders, cardiovascular disease, brain or neuronal-associated diseases, metabolic disorders and inflammatory disorders.

16. The method of claim 15, wherein said disease or disorder is selected from the group consisting of cancers of tissues; cancers of blood or hematopoietic origin; cancers of the breast, colon, lung, prostrate, cervical, brain, ovarian, bladder or kidney.

17. The method of claim 15, wherein said disease or disorder is selected from the group consisting of central or peripheral nervous system diseases,

migraines; pain; sexual dysfunction; mood disorders; attention disorders; cognition disorders; hypotension; hypertension; psychotic disorders; neurological disorders and dyskinesias.

18. The method of claim 15, wherein said disease or disorder is selected from the group consisting of inflammatory disorders including rheumatoid arthritis, chronic inflammatory bowel disease, chronic inflammatory pelvic disease, multiple sclerosis, asthma, osteoarthritis, psoriasis, atherosclerosis, rhinitis, autoimmunity, and organ transplant rejection.

19. The method of claim 15, wherein said substance modulates phosphatase activity *in vitro*.

20. The method of claim 19, wherein said substance is a phosphatase inhibitor.

21. A method for detection of a phosphatase polypeptide in a sample as a diagnostic tool for a disease or disorder, wherein said method comprises:

(a) contacting said sample with a nucleic acid probe which hybridizes under hybridization assay conditions to a nucleic acid target region of a phosphatase polypeptide having an amino acid sequence set forth in SEQ ID NO:2, said probe comprising the nucleic acid sequence, fragments thereof or the complements of said sequences and fragments;and

(b) detecting the presence or amount of the target region:probe hybrid, as an indication of said disease or disorder.

22. The method of claim 21, wherein said disease or disorder is selected from the group consisting of cancers, immune-related diseases and disorders, cardiovascular disease, brain or neuronal-associated diseases, metabolic disorders and inflammatory disorders.

23. The method of claim 22, wherein said disease or disorder is selected from the group consisting of cancers of tissues; cancers of hematopoietic cancers of blood or hematopoietic origin; cancers of the breast, colon, lung, prostrate, cervical, brain, ovarian, bladder or kidney.

24. The method of claim 22, wherein said disease or disorder is selected from the group consisting of central or peripheral nervous systems disease, migraines, pain; sexual dysfunction; mood disorders; attention disorders; cognition disorders; hypotension; hypertension; psychotic disorders; neurological disorders; and dyskinesias.

25. The method of claim 22, wherein said disease or disorder is selected from the group consisting of inflammatory disorders including rheumatoid arthritis, chronic inflammatory bowel disease, chronic inflammatory pelvic disease, multiple sclerosis, asthma, osteoarthritis, psoriasis, atherosclerosis, rhinitis, autoimmunity, and organ transplant rejection.

26. An isolated, enriched or purified nucleic acid molecule that comprises a nucleic molecule encoding a domain of a phosphatase polypeptide having a sequence of SEQ ID NO:2.

27. An isolated, enriched or purified nucleic acid molecule encoding a phosphatase polypeptide which comprises a nucleotide sequence that encodes a polypeptide having an amino acid sequence that has at least 90 % identity to a polypeptide set forth in SEQ ID NO:2.

28. The isolated, enriched or purified nucleic acid molecule according to Claim 1 wherein the molecule comprises a nucleotide sequence substantially identical to a sequence of SEQ ID NO:1.

29. An isolated, enriched or purified nucleic acid molecule consisting essentially of about 10-30 contiguous nucleotide bases of a nucleic acid sequence that encodes a polypeptide that is SEQ ID NO:2.

30. The isolated, enriched or purified nucleic acid molecule of Claim 29 consisting essentially of about 10-30 contiguous nucleotide bases of a nucleic acid sequence of SEQ ID NO:1.

31. A recombinant cell comprising the nucleic acid molecule of claim 1.

32. A vector comprising the nucleic acid molecule of claim 1.